

Claims

What is claimed is:

1. A voice information registration method, employed by a speech recognition apparatus, for which a voice input device is used, comprising:

5 (a) obtaining a sentence group, which includes the first to the N-th (N is a natural number equal to or greater than 2) sentence;

(b) obtaining the sounds-like spelling for a word that is included in the i-th (i is a natural number equal to or smaller than N) sentence, but is not entered in a speech recognition dictionary;

(c) obtaining a base form based on said sounds-like spelling of said word; and

(d) registering said base form in a speech recognition dictionary in correlation with said word.

2. A sentence specification method, employed by a speech recognition apparatus, for which a voice input device is used, comprising:

15 a registration step including:

(a1) obtaining a sentence group, which includes the first to the N-th (N is a natural number equal to or greater than 2) sentence,

20 (a2) obtaining the sounds-like spelling for a word that is included in the i-th (i is a natural number equal to or smaller than N) sentence, but is not entered in a speech recognition dictionary,

(a3) obtaining a base form based on said sounds-like spelling of said word, and

(a4) registering said base form in a speech recognition dictionary in correlation with said word; and

a recognition step including:

25 (b1) obtaining voice information that is input as a user reads and vocally reproduces a display corresponding to said i-th sentence,

(b2) employing said base form to recognize said voice information and to select a speech recognition sentence, and

(b3) comparing said i-th sentence with said selected speech recognition sentence.

5 3. The sentence specification method according to claim 2, wherein said group of target sentences is obtained from an application, said method further comprising a step of generating a control message corresponding to said i-th sentence and transmitting said control message to said application.

10 4. The sentence specification method according to claim 2, wherein a sounds-like spelling score is stored in correlation with the sounds-like spelling of said word; wherein a pronunciation score is stored in correlation with said base form; and wherein, when a function value that is obtained by using said sounds-like spelling score and said pronunciation score exceeds a threshold value, said base form is registered in a speech recognition dictionary.

15 5. A sentence specification method, employed by a speech recognition apparatus, for which a voice input device is used, comprising:

a registration step including:

(a1) obtaining a sentence group, which includes the first to the N-th (N is a natural number equal to or greater than 2) sentence,

20 (a2) obtaining the sounds-like spelling for a word that is included in the i-th (i is a natural number equal to or smaller than N) sentence, but is not entered in a speech recognition dictionary,

(a3) obtaining a base form based on said sounds-like spelling of said word,

(a4) calculating a score for said base form, and

25 (a5) registering said base form, when said score for said base form exceeds a threshold value, in said speech recognition dictionary in correlation with said word; and

a recognition step including:

(b1) obtaining voice information that is input as a user reads and vocally reproduces a display corresponding to said i-th sentence,

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(b2) employing said base form to recognize said voice information and to select a speech recognition sentence,

(b3) comparing said i-th sentence with said selected speech recognition sentence,

(b4) performing a process associated with a sentence for which a match is obtained when it is found that said i-th sentence and said selected speech recognition sentence match,

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(b5) updating said threshold value to provide a smaller second threshold value when only part of said selected speech recognition sentence is matched by said i-th sentence,

(b6) detecting an unknown word that is included in said i-th sentence,

(b7) obtaining the sounds-like spelling of said unknown word,

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(b8) obtaining a second base form based on said sounds-like spelling for said unknown word,

(b9) calculating the score for said second base form, and

(b10) registering said score in said speech recognition dictionary, in correlation with said unknown word, when said score for said second base form exceeds said second threshold value.

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6. A speech recognition apparatus, for which a voice input device is used, comprising:

(a) a sentence specification unit for obtaining a sentence group, which includes the first to the N-th (N is a natural number equal to or greater than 2) sentence;

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(b) an unknown word detector for obtaining the sounds-like spelling for a word that is included in the i-th (i is a natural number equal to or smaller than N) sentence, but is not entered in a speech recognition dictionary;

(c) a base form generator for obtaining a base form based on said sounds-like spelling of said word; and

(d) a speech recognition dictionary to which said base form is stored in correlation with said word.

5 7. A speech recognition apparatus, for which a voice input device is used, comprising:

(a) a sentence specification unit for obtaining a sentence group, which includes the first to the N-th (N is a natural number equal to or greater than 2) sentence;

(b) an unknown word detector for obtaining the sounds-like spelling for a word that is included in the i-th (i is a natural number equal to or smaller than N) sentence, but is not entered in a speech recognition dictionary;

(c) a base form generator for obtaining a base form based on said sounds-like spelling of said word;

(d) a speech recognition dictionary in which said base form is stored in correlation with said word;

(e) a voice input unit for obtaining voice information that is input as a user reads and vocally reproduces a display corresponding to said i-th sentence; and

(f) a speech recognition engine for employing said base form to recognize said voice information and to select a speech recognition sentence,

20 wherein (a2) said sentence specification unit compares said i-th sentence with said selected speech recognition sentence.

25 8. The speech recognition apparatus according to claim 7, wherein said sentence specification unit obtains said group of target sentences from an application, generates a control message corresponding to said i-th sentence, and transmits said control message to said application.

5 9. The speech recognition apparatus according to claim 7, wherein a sounds-like spelling score is stored in correlation with the sounds-like spelling of said word; wherein a pronunciation score is stored in correlation with said base form; and wherein, when a function value that is obtained by using said sounds-like spelling score and said pronunciation score exceeds a threshold value, said base form is registered in a speech recognition dictionary.

10 10. A speech recognition apparatus, for which a voice input device is used, comprising:

(a) a sentence specification unit for obtaining a sentence group, which includes the first to the N-th (N is a natural number equal to or greater than 2) sentence;

(b) an unknown word detector for obtaining the sounds-like spelling for a word that is included in the i-th (i is a natural number equal to or smaller than N) sentence, but is not entered in a speech recognition dictionary;

15 (c) a base form generator for obtaining a base form based on said sounds-like spelling of said word, and for calculating a score for said base form;

(d) a speech recognition dictionary in which, when said score for said base form exceeds a threshold value, said base form is registered in said speech recognition dictionary in correlation with said word;

20 (e) a voice input unit for obtaining voice information that is input as a user reads and vocally reproduces a display corresponding to said i-th sentence;

(f) a speech recognition engine for employing said base form to recognize said voice information and to select a speech recognition sentence,

25 wherein (a2) said sentence specification unit compares said i-th sentence with said selected speech recognition sentence; performs a process associated with a sentence for which a match is obtained when it is found that said i-th sentence and said selected speech recognition sentence match; updates said threshold value to provide a smaller second threshold value when only part of said selected speech recognition sentence is

matched by said i-th sentence; instructs said unknown word detector to detect an unknown word that is included in said i-th sentence and to obtain the sounds-like spelling of said unknown word; instructs said base form generator to obtain a second base form based on said sounds-like spelling for said unknown word and to calculate the score for said second base form; and registers said score in said speech recognition dictionary, in correlation with said unknown word, when said score for said second base form exceeds said second threshold value.

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11. A storage medium in which a program for specifying a sentence is stored to be executed by a speech recognition apparatus, for which a voice input device is used, said program comprising:

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(a) program code for instructing said speech recognition apparatus to obtain a sentence group, which includes the first to the N-th (N is a natural number equal to or greater than 2) sentence;

(b) program code for instructing said speech recognition apparatus to obtain the sounds-like spelling for a word that is included in the i-th (i is a natural number equal to or smaller than N) sentence, but is not entered in a speech recognition dictionary;

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(c) program code for instructing said speech recognition apparatus to obtain a base form based on said sounds-like spelling of said word; and

(d) program code for instructing said speech recognition apparatus to register said base form in a speech recognition dictionary in correlation with said word.

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12. A storage medium in which a program for specifying a sentence is stored to be executed by a speech recognition apparatus, for which a voice input device is used, said program comprising:

(a) program code for instructing said speech recognition apparatus to obtain a sentence group, which includes the first to the N-th (N is a natural number equal to or greater than 2) sentence;

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15. A storage medium in which a program for specifying a sentence is stored to be executed by a speech recognition apparatus, for which a voice input device is used, said program comprising:

5 (a) program code for instructing said speech recognition apparatus to obtain a sentence group, which includes the first to the N-th (N is a natural number equal to or greater than 2) sentence;

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10 (b) program code for instructing said speech recognition apparatus to obtain the sounds-like spelling for a word that is included in the i-th (i is a natural number equal to or smaller than N) sentence, but is not entered in a speech recognition dictionary;

10 (c) program code for instructing said speech recognition apparatus to obtain a base form based on said sounds-like spelling of said word;

(d) program code for instructing said speech recognition apparatus to calculate a score for said base form;

15 (e) program code for instructing said speech recognition apparatus to register said base form, when said score for said base form exceeds a threshold value, in said speech recognition dictionary in correlation with said word;

(f) program code for instructing said speech recognition apparatus to obtain voice information that is input as a user reads and vocally reproduces a display corresponding to said i-th sentence;

20 (g) program code for instructing said speech recognition apparatus to employ said base form to recognize said voice information and to select a speech recognition sentence;

(h) program code for instructing said speech recognition apparatus to compare said i-th sentence with said selected speech recognition sentence;

25 (i) program code for instructing said speech recognition apparatus to perform a process associated with a sentence for which a match is obtained when it is found that said i-th sentence and said selected speech recognition sentence match;

(j) program code for instructing said speech recognition apparatus to update said threshold value to provide a smaller second threshold value when only part of said selected speech recognition sentence is matched by said i-th sentence;

(k) program code for instructing said speech recognition apparatus to detect an unknown word that is included in said i-th sentence,

(l) program code for instructing said speech recognition apparatus to obtain the sounds-like spelling of said unknown word;

(m) program code for instructing said speech recognition apparatus to obtain a second base form based on said sounds-like spelling for said unknown word;

(n) program code for instructing said speech recognition apparatus to calculate the score for said second base form; and

(o) program code for instructing said speech recognition apparatus to registering said score in said speech recognition dictionary, in correlation with said unknown word, when said score for said second base form exceeds said second threshold value.